DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: **Sterling Casket Hardware Co., Inc.**
Facility Address: **14430 Enterprise Road, Abingdon, VA**
Facility EPA ID #: **VAD000020115**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ✓ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants	
Groundwater			✓		see attached, item #1
Air (indoors)[2]		✓			see attached, item #2
Surface Soil (<2 ft)	✓				see attached, item #3
Surface Water		✓			see attached, item #4
Sediment					
Subsurf. Soil (>2 ft)			✓		see attached, item #5
Air (outdoors)		✓			see attached, item #6

_____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

__✓__ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):
See attached page

("Unknowns" are carried through with "Yes" determinations to ascertain what information is needed or if risks are negligible.)

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective

risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

1. Groundwater – IN

REFERENCE: Groundwater Monitoring Report for June 2004 dated August 4, 2004

RATIONALE: A new groundwater monitoring system was installed in September 2002 pursuant to an agreement between the Department and the facility. To date, the first three quarters of baseline sampling have been conducted. The third quarter data was submitted August 4, 2004. Although data from the previous monitoring system indicated the presence of a potential inorganic contaminant plume, there is no conclusive evidence of contaminant plume development or migration at this time at this facility.

This determination shall be reevaluated following the completion of the baseline sampling from the new monitoring system.

2. Air (indoors) – NO

REFERENCE: Groundwater Monitoring Report for June 2004 dated August 4, 2004

RATIONALE: Data from the first three quarters of baseline sampling from the new groundwater monitoring system have found detectable levels of VOCs (1,4-dioxane and phenols) in the groundwater. However, the highest level of total phenols detected (0.21 ppb at Well 10) is 5 orders of magnitude lower than the current RBC tapwater level ($1.1x10^4$ ppb). Also, the only detection of 1,4-dioxane (3 ppb at Well 9) is lower than the RBC tapwater level (6.1 ppb). Therefore, it can be reasonably assumed that such low levels of VOCs in groundwater would not result in VOCs concentrations in indoor air that are above acceptable risk levels.

3. Surface Soil – YES

REFERENCE: *Final Soil Sampling Report, Sterling Casket Hardware Site*; April 4, 2003

RATIONALE: EPA III residential RBC levels for Ni and Cu are 1,600 ppm and 3,100 ppm, respectively. There is an abandoned wastewater sump on the northwest side of the manufacturing building that is currently backfilled to surrounding grade. Soil located within the sump were sampled in July 2002 and showed levels of 1,820 ppm Ni and 3,550 ppm Cu.

The EPA III industrial RBC level for As is 3.8 ppm. All surface and sub-surface samples (including those from a background location) exceed this level. The levels of As are fairly consistent throughout the site (1.7-19.8 ppm). Although there is no reason at this time to consider these levels to be anything other than background artifacts, additional studies will be conducted under the Facility Lead Agreement to confirm whether or not these levels of As are naturally occurring.

4. Surface Water – NO

REFERENCE: *Stabilization Initiative Inspection Report for the Sterling Casket Hardware Company*; U.S. EPA, Region III; September 1995; Section II.B.3.

RATIONALE: Drainage swales are located around the facility for run-off/run-on control. There is no surface water in or near the facility.

5. Subsurface Soil – IN

REFERENCE: *Final Soil Sampling Report, Sterling Casket Hardware Site*; April 4, 2003

RATIONALE: No subsurface (>2 ft bgs) sample results exceed EPA III residential RBC levels. However, SWMU No. 7 (Closed Areas 1 and 2/Surface Impoundments #s 1 and 2) did not clean close (wastes solidified in-place and

concrete tanks/ditches debris placed as fill). The levels of F007, F008, and D003 constituents remaining in the wastes and soils at SWMU 7 are not known.

6. Air (outdoors) – NO

REFERENCE: Groundwater Monitoring Report for June 2004 dated August 4, 2004

RATIONALE: Data from the first three quarters of baseline sampling from the new groundwater monitoring system have found detectable levels of VOCs (1,4-dioxane and phenols) in the groundwater. However, the highest level of total phenols detected (0.21 ppb at Well 10) is 5 orders of magnitude lower than the current RBC tapwater level ($1.1x10^4$ ppb). Also, the only detection of 1,4-dioxane (3 ppb at Well 9) is lower than the RBC tapwater level (6.1 ppb). Therefore, it can be reasonably assumed that such low levels of VOCs in groundwater would not result in VOCs concentrations in outdoor air that are above acceptable risk levels.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential **Human Receptors** (Under Current Conditions)						
Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	NO	NO	NO	NO			NO
~~Air (indoors)~~	##	##	##				##
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
~~Surface Water~~	##	##			##	##	##
Sediment							
Soil (subsurface e.g., >2 ft)				NO			NO
~~Air (outdoors)~~	##	##	##	##	##		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

✓ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

_____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):
Groundwater - see attached page, Item #1
Soil (surface) - see attached page, Item #2

Soil (subsurface) - see attached page, Item #3

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

1. Groundwater

REFERENCE: All available information within the Department files.

RATIONALE:

Residents

NO – There is no information indicating the presence of residents on the facility.

Workers

NO – Water for plant production and worker use is provided by a local public supply system, and the intakes for the system are located more than 3 miles from the facility. Access to groundwater monitoring wells are controlled by lock and key. Therefore, workers cannot be exposed to groundwater from the facility.

Day-Care

NO – There is no information indicating the presence of a day-care on the facility.

Construction

NO – The closest depth to groundwater is approximately 30-50 feet below ground surface (BGS). As most construction activities never exceed 10-15 feet BGS, it is highly unlikely that any contact with groundwater will occur.

Food

NO – There is no information indicating that food is grown in or comes into contact with contaminated soil.

2. Soil (surface)

REFERENCE: All available information within the Department files.

RATIONALE:

Residents

NO – There is no information indicating the presence of residents on the facility.

Workers

NO – The facility has implemented a temporary measure which covers and restricts access to the abandoned wastewater sump and has also installed warning signs to prevent disturbance of the area. There is no potential for particulate exposure. This area will be addressed (most likely, excavation and off-site disposal) pursuant to the Facility Lead Agreement (FLA).

Day-Care

NO – There is no information indicating the presence of a day-care on the facility.

Construction

NO – The facility has implemented a temporary measure to restrict access to the abandoned wastewater sump and installed warning signs to prevent disturbance of the unit. This unit will be addressed (most likely, excavation and off-site disposal) pursuant to the Facility Lead Agreement (FLA).

Trespassers

NO – The facility has implemented a temporary measure to restrict access to the abandoned wastewater sump and installed warning signs to prevent disturbance of the unit. This unit will be addressed (most likely,

excavation and off-site disposal) pursuant to the Facility Lead Agreement (FLA).

Recreation
NO – There is no information indicating the presence of recreational facilities or attractions (e.g., nature trails, surface water for swimming/boating, etc.) on the facility.

Food
NO – There is no information indicating that food is grown in or comes into contact with contaminated soil.

3. Soil (subsurface)

REFERENCE: All available information within the Department files.

RATIONALE:

Construction
NO –
As stated previously, SWMU No. 7 (Closed Areas 1 and 2/Surface Impoundments #s 1 and 2) did not clean close, and the levels of F007, F008, and D003 constituents remaining in the wastes and soils at SWMU 7 are not known. Two hazardous waste landfill caps have been installed over the contaminated soils and fill materials. A post-closure care order prohibits any disturbance of the caps. Based on current information, no other areas of subsurface soil contamination are present at the site.

Food
NO – There is no information indicating that food is grown in or comes into contact with contaminated soil.

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

✓ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Sterling Casket Hardware Company, Inc. facility, EPA ID # VAD000020115, located at Abingdon, VA under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO - "Current Human Exposures" are NOT "Under Control."

_____ IN - More information is needed to make a determination.

Completed by (original signed) Date 8 September, 2004
(print) Garwin W. Eng
(title) Env. Engr. Sr.

Supervisor (original signed) Date 9 September, 2004
(print) Leslie A. Romanchik
(title) Director, Office of Waste Permitting
(EPA Region or State) VA DEQ

Locations where References may be found:

VA Department of Environmental Quality, Office of Waste Permitting files

Contact telephone and e-mail numbers:

(name) Garwin W. Eng
(phone #) (804) 698-4131
(fax #) (804) 698-4234
(e-mail) gweng@deq.state.va.us

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.